TABLE 2.—*Instrumental reports, June, 1919*—Continued.

Canada. *Ottawa. Dominion Astronomical Observatory.* Earthquake Station. Otto Klotz.

Lat., 45° 23′ 38″ N.; long., 75° 42′ 57″ W. Elevation, 83 meters.

Instruments: Two Bosch photographic horizontal pendulums, one Spindler & Hoyer 80k. vertical seismograph.

Instrumental constants..V 120 T_0 26

Date.	Character.	Phase.	Time.	Period. T.	Amplitude. A_E.	Amplitude. A_N.	Distance.	Remarks.
1919			*H. m. s.*	*Sec.*	μ	μ	*Km.*	
June 29	.....	i.....	0 57 54	.....	.....	.....	.....	Very small amplitudes.
		e.....	1 07 18	.....	.....	.....	.....	Small microseisms prevent the reading of P.
		e.....	1 20 ..	7.5	.....	.....	.....	
		F.....	1 40 ..	.....	.....	.....	.....	
29	.....	*O*.....	*15 06 05*	.....	.....	.....	6,600	Italian quake reported in press.
		P_N....	15 16 10	.....	.....	.....	.....	
		ePR_{IN}	15 18 40	.....	.....	.....	.....	
		eS_N...	15 24 18	.....	.....	.....	.....	
		eL.....	15 34 30	22	.....	.....	.....	
		F.....	15 50 ..	.....	.....	.....	.....	
29	.....	*O*.....	*23 14 14*	.....	.....	.....	3,590	Very sharp offsets mark P. and S. eL is difficult to determine.
		iP.....	23 21 01	.....	.....	.....	.....	
		iS.....	23 26 24	.....	.....	.....	.....	
		L.....	23 31 30	.....	.....	.....	.....	Amplitudes small.
		L.....	23 35 ..	20	.....	.....	.....	
		L.....	23 46 ..	12	.....	.....	.....	
30	.....	L.....	0 15 ..	12	.....	.....	.....	
		F.....	0 35 ..	.....	.....	.....	.....	
30	.....	eN?...	7 48 30	.....	.....	.....	.....	Very small amplitudes.
		e.....	7 51 18	.....	.....	.....	.....	L waves regular and sinusodial throughout.
		eL.....	8 15 ..	20	.....	.....	.....	
		eL.....	9 00 ..	15	.....	.....	.....	
		F.....	9 05 ..	.....	.....	.....	.....	

Canada. *Toronto. Dominion Meteorological Service.*

Lat,. 43° 40′ 01″ N.; long., 79° 23′ 54″ W. Elevation, 113.7 meters. Subsoil: Sand and clay.

Instrument: Milne horizontal pendulum, North; in the meridian.

Instrumental constant..T_0 18. Pillar deviation, 1 mm. swing of boom=0.45″.

Date.	Character.	Phase.	Time.	Period. T.	Amplitude. A_E.	Amplitude. A_N.	Distance.	Remarks.
June 2	.....	L.....	6 59 18	.....	.....	.....	.....	Doubtful as to being seismic.
		M.....	6 59 48	.....	*200	.....	.....	
		F.....	7 03 06	.....	.....	.....	.....	
10	.....	L.....	20 57 54	.....	.....	.....	.....	
		M.....	20 58 36	.....	*100	.....	.....	
		F.....	21 03 48	.....	.....	.....	.....	
15	.....	M?....	16 17 54	.....	*100	.....	.....	Small micros going on.
15	.....	M.....	18 05 36	.....	*100	.....	.....	Do.
29	.....	L.....	1 03 18	.....	.....	.....	.....	
		L.....	1h12m00	.....	*100	.....	.....	Small micros of uniform character and intervals going on from 0h 30m 30s to 1h 30m 42s.
29	.....	L.....	15 39 48	.....	.....	.....	.....	
		L.....	15 42 30	.....	.....	.....	.....	
		M.....	15 43 36	.....	*100	.....	.....	
		F.....	15 50 12	.....	.....	.....	.....	
29	.....	P?....	23 21 54	.....	.....	.....	2,830?	Marked disturbance.
		S.....	23 26 24	.....	.....	.....	.....	
		iS.....	23 29 42	.....	.....	.....	.....	
		i.....	23 30 24	.....	.....	.....	.....	
		L.....	23 32 12	.....	.....	.....	.....	
		M.....	23 33 24	.....	*2,100	.....	.....	
		iL.....	23 34 54	.....	.....	.....	.....	
30	.....	F.....	0 30 24	.....	.....	.....	.....	
30	.....	eL.....	8 22 30	.....	.....	.....	.....	
		eL.....	8 32 48	.....	.....	.....	.....	
		M.....	8 45 12	.....	*200	.....	.....	
		F.....	9 10 12	.....	.....	.....	.....	

* Trace amplitude.

Canada. *Victoria, B. C. Dominion Meteorological Service.*

Lat., 48° 24′ N.; long., 123° 19′ W. Elevation, 67.7 meters. Subsoil: Rock.

Instruments: Wiechert, vertical; Milne horizontal pendulum, North. In the meridian.

Instrumental constant..T_0 18. Pillar deviation, 1 mm. swing of boom=0.54″.

Date.	Character.	Phase.	Time.	Period. T.	Amplitude. A_E.	Amplitude. A_N.	Distance.	Remarks.
June 2	.....	P.....	7 13 13	.....	.....	.....	.....	May not be a quake.
		M.....	7 14 02	.....	*100	.....	.....	
10	.....	L?....	21 03 00	.....	.....	.....	.....	
		M.....	21 09 24	.....	*100	.....	.....	
		F.....	21 14 29	.....	.....	.....	.....	
11	.....	M?....	6 55 09	.....	*50	.....	.....	May not be a quake.
14	.....	M.....	8 01 32	.....	*100	.....	.....	
15	.....	L?....	16 25 24	.....	.....	.....	.....	
		M.....	16 27 23	.....	*200	.....	.....	
		F.....	16 30 51	.....	.....	.....	.....	
15	.....	P?....	17 44 14	.....	.....	.....	.....	
		M.....	17 46 13	.....	*300	.....	.....	
		F.....	17 50 11	.....	.....	.....	.....	
29	.....	P or L.	1 06 00	.....	.....	.....	.....	
		M.....	1 06 59	.....	*500	.....	.....	
		F.....	1 12 53	.....	.....	.....	.....	
29	.....	M.....	15 51 48	.....	*200	.....	.....	
29	.....	P?....	23 22 19	.....	.....	.....	.....	
		S?.....	23 28 42	.....	.....	.....	.....	
		L.....	23 38 03	.....	.....	.....	.....	
		M.....	23 48 12	.....	*1,800	.....	.....	
30	.....	F.....	00 46 14	.....	.....	.....	.....	
30	.....	M.....	8 44 00	.....	*200	.....	.....	
		F.....	9 19 44	.....	.....	.....	.....	

* Trace amplitude.

SEISMOLOGICAL DISPATCHES.[1]

Seattle, Wash., June 5, 1919.

What seemingly was an earth disturbance gave buildings in Seattle a slight shaking up to-night. The disturbance was felt as far as 45 miles from here. (Associated Press.)

Florence, Italy, June 29, 1919.

A violent earthquake shock was felt here this afternoon at 5:30 o'clock and reports state that neighboring towns were also shaken. So far as known only slight damage was done. (Associated Press.)

Florence, Italy, June 29, 1919.

Additional advice shows that damage was done by the earthquake of to-day. The tremor was sharp, people rushing from houses in panic. The damage in this city was slight.

Rome, Italy, June 30, 1919.

One hundred and twenty persons are estimated to have been killed in and near Vicchio, the center of the earth movements Sunday, in the Florence district, according to the Tempo. The town of Vicchio was reduced to a heap of ruins and a number of the villages were destroyed. (Associated Press.)

[1] Reported by the organization indicated and collected by the seismological station at Georgetown University, Washington, D. C.

TABLE 3.—*Late reports (instrumental).*

Date.	Character.	Phase.	Time.	Period. T.	Amplitude. A_E.	Amplitude. A_N.	Distance.	Remarks.
Canada. *Ottawa. Dominion Astronomical Observatory.* Earthquake Station. Otto Klotz.								
Lat., 45° 23′ 38″ N.; long., 75° 42′ 57″ W. Elevation, 83 meters.								
Instruments: Two Bosch photographic horizontal pendulums, one Spindler & Hoyer 80 kg. vertical seismograph.								
Instrumental constants..				V 120	T_0 26			
1919 Apr. 27	.....	$e?_N$	*H. m. s.* 0 52 07	*Sec.*	μ	μ	*km.*	Amplitudes very small. Preliminary waves very irregular.
		eL?...	1 26 ..	28				
		L.....	1 32 ..	34				
		L.....	1 45 ..	15				
		F.....	2 ca ..					
28	.....	e_N.....	6 53 52					
		e_E.....	6 58 08					
		eL_E...	7 02 ..	20				
		L.....	7 12 ..	12				
		L.....	7 30 ..	12				
		L.....	7 40 ..	12				
		F.....	8					
30	.....	*O*.....	7 *16 50*				(1)	All phases difficult to read with precision, but all are readily determined as to character.
		eP.....	7 31 30					
		$eP'R_1$..	7 36 18					
		eS?....	7 44 12					
		eL.....	8 01 ..	55				
		L.....	8 20 ..	25				
		L.....	8 35 ..	18				
		L.....	8 50 ..	15				
		L.....	9 10 ..	14				
		LR_1...	9 20 ..	18				
		L.....	9 35 ..	20				
		L.....	10 00 ..	16				
		L.....	10 20 ..	18				
		L.....	10 35 ..	16				
		L.....	11 05 ..	16				
		L.....	11 30 ..	16				
		L.....	12 00 ..	16				
		F.....	12 30 ..					
May 1	.....	eL_W...	5 59 ..	25				
		L.....	6 10 ..	20				
		L.....	6 22 ..	15				
		F.....	6 40 ..					
2	.....	e.....	2 32 ..					
		e.....	2 34 ..					
		$eL?_E$..	2 41 48					
		L_W....	2 52 ..	25				
		L_W....	2 57 ..	21				
		L.....	3 05 ..	21				
		L.....	3 12 ..	17				
		L.....	3 24 ..	16				
		L.....	3 40 ..	16				
		L.....	3 51 ..	16				
		L.....	4 20 ..	15				
		F.....	4 40 ..					
3	.....	e.....	6 15 24 6 22 ..	7				May not be seismic.
3	.....	*O*.....	*0 52 10*				9,460	
		iP.....	1 04 46					
		iS.....	1 15 20					
		$L?_E$...	1 30 30					
		L.....	1 34 ..	34				
		L.....	1 45 ..	20				
		L.....	2 00 ..	18				
		L.....	2 10 ..	16				
		L.....	2 25 ..	13				
		L.....	2 40 ..	11				
		L.....	3 00 ..	11				
		L.....	3 19 ..	12				
		L.....	3 40 ..	9				
		L.....	4 08 ..	10				
		F.....	4 15 ..					

(1) 12600 ca.

Date.	Character.	Phase.	Time.	Period. T.	Amplitude. A_E.	Amplitude. A_N.	Distance.	Remarks.
Canada. *Ottawa. Dominion Astronomical Observatory*—Continued.								
1919 May 6	.....	*O*.....	*H. m. s.* *19 48 19*	*Sec.*	μ	μ	*km.* 9,700	
		eP.....	20 01 06					
		S.....	20 11 51					
		L.....	20 31 ..	50				
		L.....	20 45 ..	22				
		L.....	20 55 ..	18				
		L.....	21 05 ..	17				
		L.....	21 15 ..	17				
		L.....	21 30 ..	15				
		L.....	21 44 ..	18				
		L.....	22 05 ..	18				
		L.....	22 30 ..	15				
		L.....	22 50 ..	12				
		F.....	23 05 ..					
7	.....	*O*.....	*5 21 58*				9,020	
		eP.....	5 34 12					
		eS?....	5 44 24					
		eSR1?.	5 51 00					
		eL.....	6 04 ..	40				
		L.....	6 22 ..	18				
		L.....	6 30 ..	17				
		L.....	6 50 ..	15				
		F.....	7 15 ..					
8	.....	eL_E...	11 05 .. 11 15 ..	18				N.-S. lost in microseisms.
8	.....	L.....	21 20 .. 21 32 ..					Rather irregular. May not be seismic.
20	.....	*O*.....	*4 19 54*				3,980	
		P_E....	4 27 11					
		S.....	4 32 57					
		L_N....	4 37 30					
		L.....	4 40 ..	15				
		L.....	4 46 ..	7				
		F.....	5 05 ..					
22	.....	*O*.....	*11 52 48*				6,760	
		P.....	12 03 02					
		S.....	12 11 19					
		eL.....	12 22 ..					
		L.....	12 26 ..	20				
		L.....	12 30 ..	18				
		L.....	12 42 ..	13				
		L.....	12 50 ..	12				
		F.....						Lost in changing the sheets at $13^h\ 15^m$.
23	.....	i.....	3 16 03					
		i.....	3 24 42					
		eL_E...	3 32 ..	22				Very irregular periods on N.-S. Amplitudes very small throughout.
		L.....	3 45 ..	22				
		F.....	4 05 ..					
29	.....	eL.....	11 55 .. 12 20 ..					Very faint: barely discernible.
Canada. *Toronto. Dominion Meteorological Service.*								
Lat., 43° 40′ 01″ N.; long., 79° 23′ 54″ W. Elevation, 113.7 meters. Subsoil: Sand and clay.								
Instrument: Milne horizontal pendulum, North; in the meridian.								
Instrumental constant..18.				T_0 Pillar deviation, 1 mm. swing of boom=0.50″.				
1919, May 23	.....	L.....	*H. m. s.* 3 33 36	*Sec.*	μ	μ	*km.*	
		M.....	3 40 12		*100			
		F.....	4 05 00					

*Trace amplitude.